REMARKS

Reconsideration of this application and allowance of the claims is respectfully requested.

A check for $200 is enclosed as the extra claim filing fee for one extra independent claim. Please charge Deposit Account No. 19-1351 of Seyfarth Shaw for any extra fees that are due.

Support for the amendments to the claims is found particularly in Figs. 2-4, and, in the specification, particularly the last paragraph of page 11, and page 12.

The examiner is requested to reconsider the withdrawal of claims 16-18 from consideration. It is noted that claims 16-18 each depend from allowed, generic claim 14. As such, it is believed that dependent claims 16-18 should be allowable along with claim 14, since they depend from an allowed, generic claim.

Claim 28 has been amended, partly in response to the rejection under 35 U.S.C. 112 raised by the examiner.

The examiner has rejected claims 28-30 as anticipated by Heilmann et al. European Patent 0 728 509. A computer translation is enclosed.

Heilmann discloses an in line bubble trap. However, it is submitted that the present claims 28 *et seq.* provide significant patentable distinction over the disclosure of Heilmann et al.

Specifically, claim 28 calls for "...said port communicating with a port tube extending longitudinally into said chamber adjacent to said side wall...". Note how port tube 92 (Fig. 3) is radially spaced outwardly in chamber 66, in a manner that is contrary to the corresponding flow channel or port tube 11 of Heilmann European Patent 0 728

509. It can be seen in Heilmann that the flow channel tube 11 is axially positioned in its chamber, and thus is not adjacent to the chamber side wall, as called for in claim 1.

An advantage of this lies in the fact that port tube 92 of the Fig. 2-4 embodiment of this application can act as "a baffle to convert circumferential flow above said tube end into turbulent flow, to prevent formation of a blood whirlpool having a significant, centrally depressed upper surface" (as called for in claim 28).

To the contrary, in Heilmann et al., port tube or flow channel 11 is axially positioned along its length, and thus does not substantially serve to convert circumferential flow above its double "tube end" 12, 14 into turbulent flow. The circumferential flow of the fluid will move easily around a simple, axial tube of Heilmann, et al., while the radially displaced tube 92 as used in this invention will convert the circumferential flow quickly into turbulent flow. Thus, rotational, circumferential flow is likely to continue at the top of the Heilmann et al. chamber, while it clearly will not significantly continue at the top of the chamber of this invention.

While tube 92 clearly defines a "baffle" of the type called for in claim 28, there is an additional baffle provided by baffle tube 100 in the specific embodiment of Figs. 2-4. As one can see by inspection of Figs. 3 and 4, both tubes 92 and 100 project inwardly from the tubular, outer wall of the chamber, and thus both serve as flow baffles. While both of tubes 92 and 100 are present as flow baffles, only one of them would be absolutely needed, in accordance with this invention, to provide the desired result called for in claim 28 and subsequent claims of converting circumferential flow above tube end 94 into turbulent flow, and to prevent formation of a blood whirlpool. The entry of circumferential flow might be provided by another means, and the objects of this

invention could still be achieved; or baffle 100 could be deleted, and the objects still achieved.

A problem with a medical fluid (such as blood) whirlpool is that such whirlpools tend to suck air bubbles downwardly, propelling them toward the bottom of the chamber and interfering with their rise through the liquid, which is of course highly disadvantageous. By this invention, such a whirlpool is prevented by the one or both of baffles 92, 100 provided, while at the same time permitting a desirable, circumferential flow below inner tube end 94 and lateral aperture 98. At that level, the circumferential fluid flow is desirable as described at page 12, lines 16-22, in that such circumferential flow causes micro bubbles in the blood to be driven to the center of rotation, where they can rise upwardly through the turbulent blood area to collect under wall 96 and to join in a gas bubble or air space there.

Thus, it is submitted that the structure of Heilmann et al., with its centrally mounted and extending flow inlet 11, fails to teach the structure of this invention as in claim 28. It is acknowledged that flow conduit tubes 12 and 13 diverge radially outwardly from central flow channel 11. However, it is submitted that they will not effectively suppress the circumferential flow of fluid above conduit tubes 12, 13, so that it may be possible for a whirlpool to form in the structure of Heilmann et al. Thus, claim 28 and those claims that are dependent upon it are believed to be patentable.

Turning to claim 30, this claim also calls for a port tube, having a tube end being positioned to direct flow out of the tube circumferentially into the bubble trap chamber. Claim 30 requires a component other than the port tube which serves as a baffle, which baffle is radially outwardly spaced from the center of the chamber, and extending

longitudinally from an upper end of the chamber so that blood below about the level of the port tube is free to circumferentially flow without interference by the baffle, but at about the level of the baffle and above, circumferential flow is converted into turbulent flow. In this claim, the baffle referred to is baffle tube 100.

Claims 31-38 are clearly supported by the specification and the disclosure of Figs. 2 and 4.

Claims 39-41 call for a single flow inlet in the chamber, as at port 98 in Figs. 3 and 4. This is contrary to the double flow entry port 12, 14, of Heilmann et al.

A Terminal Disclaimer is enclosed, as well as a check for the Terminal Disclaimer filing fee, in response to the double patenting rejection.

Respectfully submitted,

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Registered Attorney for Applicant
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